

CAT Data Interpretation & Logical Reasoning

Sample Paper – 11

Duration: 40 Minutes

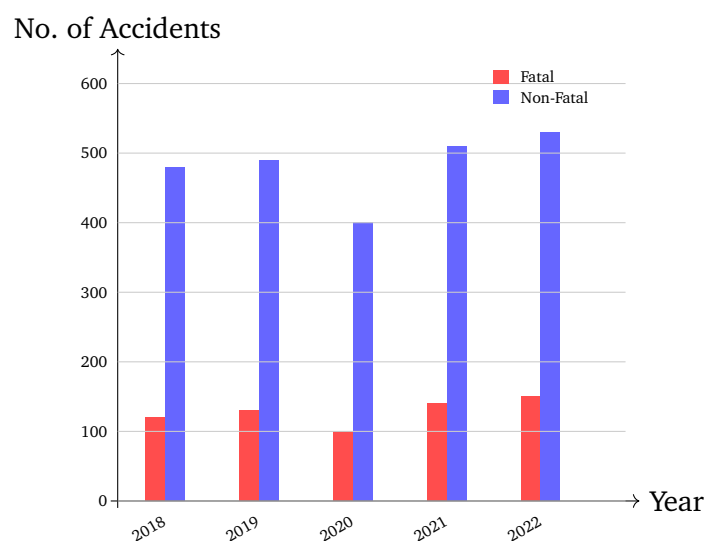
Maximum Marks: 60

Instructions

- This paper contains **20 questions** across **4 sets** (2 Data Interpretation + 2 Logical Reasoning), modelled on the DILR section of **CAT**.
- Each correct answer carries **+3 marks**. There is a penalty of **–1 mark per wrong answer**; **0** marks for unattempted questions.
- All 20 questions are single-correct MCQ. Maximum Marks: **60**.
- **No personal calculators** are permitted; a basic on-screen calculator is provided in the actual CAT exam.
- **Rough sheets** are provided at the test centre. Each set has a common data/scenario; read it carefully before attempting the questions.

Set A: Data Interpretation — Road Accident Statistics (Q1 – Q5)

The grouped bar chart below shows the **road accident statistics** (number of accidents) across two categories — Fatal and Non-Fatal — for the years 2018 to 2022.



- Q1.** In which year did the **total road accidents** show the **steepest single-year drop** compared to the previous year?
- (A) 2019
 - (B) 2020
 - (C) 2021
 - (D) 2022
- Q2.** What is the **total number of Fatal accidents** across all five years?
- (A) 600
 - (B) 620
 - (C) 640
 - (D) 660
- Q3.** By approximately what **percentage** did total accidents **increase from 2018 to 2022**?
- (A) 10%
 - (B) 11.5%
 - (C) 12%
 - (D) 13.3%
- Q4.** What was the **total number of road accidents in 2020**?
- (A) 500
 - (B) 520
 - (C) 540
 - (D) 560
- Q5.** What is the **average total accidents per year** across all five years?
- (A) 590
 - (B) 610



(C) 630

(D) 650

**Set B: Data Interpretation — Sports
Performance Metrics (Q6 – Q10)**

The table below shows the **sports performance metrics** of five athletes across four parameters.

Athlete	Speed (m/s)	Endurance (km)	Strength (kg)	Agility (/100)
A	8.5	12	80	75
B	9.0	10	90	70
C	7.5	15	70	85
D	9.5	8	100	65
E	8.0	14	75	80

Q6. Which athlete has the **highest Agility score**?

(A) B

(B) E

(C) C

(D) A

Q7. Which athlete scored the **highest in Strength**?

(A) A

(B) B

(C) E

(D) D

Q8. Which athlete has the **highest Speed**?

(A) D

(B) B

(C) C

(D) E



Q9. What is the **average Endurance score** across all five athletes?

- (A) 11.0 km
- (B) 11.8 km
- (C) 12.0 km
- (D) 12.5 km

Q10. Using the formula **Overall Score** = $2 \times \text{Speed} + \text{Endurance}$, which athlete scores the **highest**? (If two athletes tie, the one with the higher Agility score wins.)

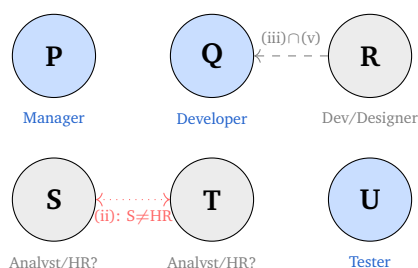
- (A) D
- (B) A
- (C) C
- (D) B

Set C: Logical Reasoning — Designation Assignment Puzzle (Q11 – Q15)

Six employees — P, Q, R, S, T, U — are each assigned exactly one of the following six designations: **Manager, Developer, Designer, Analyst, Tester, HR**. No two employees share a designation. The following conditions apply:

- (i) P is the **Manager**.
- (ii) S is **NOT** the HR.
- (iii) R is either the **Developer** or the **Designer**.
- (iv) U is the **Tester**.
- (v) Q is the **Developer**.
- (vi) If R were the Developer, then T would be the Analyst.

Assign: Manager, Developer, Designer, Analyst, Tester, HR



Q11. What is **R's designation**?

- (A) Analyst
- (B) Developer
- (C) Tester
- (D) Designer

Q12. Who is the **Manager**?

- (A) P
- (B) Q
- (C) S
- (D) T

Q13. Who holds the **HR designation**?

- (A) S
- (B) T
- (C) U
- (D) R

Q14. Which of the following statements about designations is **CORRECT**?

- (A) Q is the Analyst
- (B) S is the HR
- (C) U is the Tester
- (D) R is the Developer

Q15. How many employees have a designation that **starts with the letter 'D'**?

- (A) 0
- (B) 1
- (C) 3



(D) 2

**Set D: Logical Reasoning — Month-
Event-Person Assignment (Q16 – Q20)**

Five annual events — **Annual Day**, **Sports Meet**, **Science Fair**, **Cultural Fest**, **Tech Expo** — are each held in one of five different months: **January**, **March**, **May**, **July**, **September** (one event per month). Five organizers — A, B, C, D, E — each organize exactly one event. The following conditions apply:

- (i) Annual Day is held in **January**.
- (ii) B organizes the **Science Fair**.
- (iii) Sports Meet is held in **July**.
- (iv) E's event is held in **March**.
- (v) Cultural Fest is organized by **neither A nor C**.
- (vi) D organizes **Tech Expo**.
- (vii) Annual Day is organized by **C**.
- (viii) Science Fair is held in **May**.

Person	Event	Month
A	?	?
B	Science Fair	May
C	Annual Day	January
D	Tech Expo	?
E	?	March

Q16. In which **month** is the **Annual Day** held?

- (A) January
- (B) March
- (C) May
- (D) July

Q17. Who organizes the **Cultural Fest**?



- (A) A
- (B) E
- (C) C
- (D) D

Q18. Which event does **D** organize?

- (A) Annual Day
- (B) Sports Meet
- (C) Tech Expo
- (D) Science Fair

Q19. In which **month** is the **Sports Meet** held?

- (A) January
- (B) March
- (C) May
- (D) July

Q20. Which organizer's event is held in **September**?

- (A) D
- (B) B
- (C) E
- (D) A



Detailed Solutions**Sol. 1.****Solution**

Concept — Identifying the Steepest Single-Year Drop: Compare total accidents in each year with the previous year to find the largest decrease.

Step 1 — Compute totals for each year:

- 2018: $120 + 480 = 600$
- 2019: $130 + 490 = 620$ (change: +20)
- 2020: $100 + 400 = 500$ (change: -120 — **a drop**)
- 2021: $140 + 510 = 650$ (change: +150)
- 2022: $150 + 530 = 680$ (change: +30)

Step 2 — Identify the only year with a drop: Only 2020 shows a decrease compared to the previous year ($620 \rightarrow 500$, a drop of 120). All other years show increases.

Why other options are wrong:

- Option A: 2019 — total increased by 20 (from 600 to 620); no drop.
- Option C: 2021 — total increased by 150 (from 500 to 650); no drop.
- Option D: 2022 — total increased by 30 (from 650 to 680); no drop.

Final Answer: 2020 is the only year with a total drop (-120) $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 1](#)

Sol. 2.**Solution**

Concept — Column Summation: Add the Fatal accident counts for all five years.

Step 1 — Identify the Fatal accident count for each year: 2018 = 120, 2019 = 130, 2020 = 100, 2021 = 140, 2022 = 150.

Step 2 — Sum all values: $120 + 130 + 100 + 140 + 150 = 640$.

Why other options are wrong:

- Option A: 600 — under-counts by 40; likely omits one year or misreads a value.



- Option B: 620 — under-counts by 20; arithmetic error in addition.
- Option D: 660 — over-counts by 20; misreads one year's Fatal count.

Final Answer: Total Fatal accidents over all five years = 640 $\Rightarrow$ C

Answer: (C) [Go Back to Q 2](#)

Sol. 3.

Solution

Concept — Percentage Change: $\% \text{ change} = \frac{\text{New} - \text{Old}}{\text{Old}} \times 100.$

Step 1 — Identify total accidents in 2018 and 2022: 2018 total = 600; 2022 total = 680.

Step 2 — Calculate the percentage increase:

$$\% \text{ increase} = \frac{680 - 600}{600} \times 100 = \frac{80}{600} \times 100 \approx 13.3\%$$

Why other options are wrong:

- Option A: 10% — would imply 2022 total = $600 \times 1.10 = 660$, not 680.
- Option B: 11.5% — would imply 2022 total = $600 \times 1.115 = 669$, not 680.
- Option C: 12% — would imply 2022 total = $600 \times 1.12 = 672$, not 680.

Final Answer: Total accidents increased by approximately 13.3% from 2018 to 2022 $\Rightarrow$ D

Answer: (D) [Go Back to Q 3](#)

Sol. 4.

Solution

Concept — Row Summation: Add the Fatal and Non-Fatal counts for the year 2020.

Step 1 — Read the 2020 accident values from the chart: Fatal (2020) = 100; Non-Fatal (2020) = 400.

Step 2 — Sum both categories: $100 + 400 = 500.$



Why other options are wrong:

- Option B: 520 — over-counts by 20; likely misreads Fatal as 120 instead of 100.
- Option C: 540 — over-counts by 40; misreads one or both values.
- Option D: 560 — over-counts by 60; significant misread of the 2020 bar heights.

Final Answer: Total road accidents in 2020 = 500 $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 4](#)

Sol. 5.**Solution**

Concept — Arithmetic Mean: Average = $\frac{\text{Sum of all totals}}{5}$.

Step 1 — Compute total accidents for each year: 2018 = 600, 2019 = 620, 2020 = 500, 2021 = 650, 2022 = 680.

Step 2 — Sum and divide by 5:

$$\text{Average} = \frac{600 + 620 + 500 + 650 + 680}{5} = \frac{3050}{5} = 610$$

Why other options are wrong:

- Option A: 590 — implies total sum = 2950; under-counts by 100.
- Option C: 630 — implies total sum = 3150; over-counts by 100.
- Option D: 650 — implies total sum = 3250; over-counts by 200.

Final Answer: Average total accidents per year = 610 $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 5](#)



Sol. 6.

Solution

Concept — Identifying the Maximum in a Column: Scan the Agility column and pick the highest value.

Step 1 — List all Agility scores:

- A: 75, B: 70, C: 85, D: 65, E: 80.

Step 2 — Identify the maximum: $85 > 80 > 75 > 70 > 65$. Athlete C has the highest Agility score of 85.

Why other options are wrong:

- Option A: B (70) — second lowest; well below C's 85.
- Option B: E (80) — second highest; still 5 points below C.
- Option D: A (75) — third highest; not the maximum.

Final Answer: Athlete C has the highest Agility score (85) $\Rightarrow$

Answer: (C) [Go Back to Q 6](#)

Sol. 7.

Solution

Concept — Identifying the Maximum in a Column: Scan the Strength column and pick the highest value.

Step 1 — List all Strength scores:

- A: 80 kg, B: 90 kg, C: 70 kg, D: 100 kg, E: 75 kg.

Step 2 — Identify the maximum: $100 > 90 > 80 > 75 > 70$. Athlete D has the highest Strength of 100 kg.

Why other options are wrong:

- Option A: A (80 kg) — third highest; 20 kg below D.
- Option B: B (90 kg) — second highest; 10 kg below D.
- Option C: E (75 kg) — fourth in the list; not the maximum.

Final Answer: Athlete D has the highest Strength (100 kg) $\Rightarrow$

Answer: (D) [Go Back to Q 7](#)



Sol. 8.

Solution

Concept — Identifying the Maximum in a Column: Scan the Speed column and pick the highest value.

Step 1 — List all Speed scores:

- A: 8.5 m/s, B: 9.0 m/s, C: 7.5 m/s, D: 9.5 m/s, E: 8.0 m/s.

Step 2 — Identify the maximum: $9.5 > 9.0 > 8.5 > 8.0 > 7.5$. Athlete D has the highest Speed of 9.5 m/s.

Why other options are wrong:

- Option B: B (9.0 m/s) — second highest; 0.5 m/s below D.
- Option C: C (7.5 m/s) — the lowest speed; not the maximum.
- Option D: E (8.0 m/s) — fourth highest; significantly below D.

Final Answer: Athlete D has the highest Speed (9.5 m/s) $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 8](#)

Sol. 9.

Solution

Concept — Arithmetic Mean: $\text{Average} = \frac{\text{Sum of Endurance values}}{5}$.

Step 1 — List all Endurance scores: A: 12 km, B: 10 km, C: 15 km, D: 8 km, E: 14 km.

Step 2 — Sum and divide by 5:

$$\text{Average} = \frac{12 + 10 + 15 + 8 + 14}{5} = \frac{59}{5} = 11.8 \text{ km}$$

Why other options are wrong:

- Option A: 11.0 km — implies sum = 55; under-counts by 4.
- Option C: 12.0 km — implies sum = 60; off by 1 from the actual sum of 59.
- Option D: 12.5 km — implies sum = 62.5; over-counts by 3.5.

Final Answer: Average Endurance score = 11.8 km $\Rightarrow$ **B**



Answer: (B) [Go Back to Q 9](#)

Sol. 10.

Solution

Concept — Formula Application and Tie-breaking: Compute $2 \times \text{Speed} + \text{Endurance}$ for each athlete; if two athletes tie, the one with the higher Agility score wins.

Step 1 — Calculate the Overall Score for each athlete:

- A: $2(8.5) + 12 = 17 + 12 = 29$
- B: $2(9.0) + 10 = 18 + 10 = 28$
- C: $2(7.5) + 15 = 15 + 15 = 30$
- D: $2(9.5) + 8 = 19 + 8 = 27$
- E: $2(8.0) + 14 = 16 + 14 = 30$

Step 2 — C and E are tied at 30; apply Agility tie-breaker: C's Agility = 85; E's Agility = 80. Since $85 > 80$, Athlete C wins.

Why other options are wrong:

- Option A: D (Overall Score = 27) — the lowest among all five athletes.
- Option B: A (Overall Score = 29) — second-best score, but still less than C's 30.
- Option D: B (Overall Score = 28) — third-best score; does not reach 30.

Final Answer: Athlete C scores the highest (30), winning the Agility tie-break $\Rightarrow$

C

Answer: (C) [Go Back to Q 10](#)

Sol. 11.

Solution

Concept — Logical Deduction (Designation Puzzle): Apply all conditions systematically to derive the unique assignment.

Step 1 — Apply fixed conditions: From (i): P = Manager. From (iv): U = Tester. From (v): Q = Developer.



Step 2 — Determine R's designation using condition (iii): R is either Developer or Designer. Since $Q = \text{Developer}$, R **must be** Designer.

Step 3 — Verify condition (vi): Condition (vi) states: "If R were the Developer, then T would be the Analyst." Since R is the Designer (not Developer), condition (vi) is vacuously satisfied.

Step 4 — Assign remaining designations: Remaining designations: Analyst and HR, for employees S and T. Condition (ii): $S \neq \text{HR} \Rightarrow S = \text{Analyst}$ and $T = \text{HR}$.

Final assignment: $P = \text{Manager}$, $Q = \text{Developer}$, $R = \text{Designer}$, $S = \text{Analyst}$, $T = \text{HR}$, $U = \text{Tester}$.

Why other options are wrong:

- Option A: Analyst — R cannot be Analyst; conditions (iii) and (v) constrain R to Developer or Designer, and Q holds Developer.
- Option B: Developer — $Q = \text{Developer}$ (condition v); R cannot also be Developer.
- Option C: Tester — $U = \text{Tester}$ (condition iv); R cannot also be Tester.

Final Answer: R's designation is Designer $\Rightarrow$ D

Answer: (D) [Go Back to Q 11](#)

Sol. 12.

Solution

Concept — Reading the Derived Assignment: From the fully derived assignment: $P = \text{Manager}$, $Q = \text{Developer}$, $R = \text{Designer}$, $S = \text{Analyst}$, $T = \text{HR}$, $U = \text{Tester}$.

Step 1 — Identify the Manager: Condition (i) directly states: P is the Manager.

Step 2 — Confirm from the full derivation: The final assignment confirms $P = \text{Manager}$ ✓.

Why other options are wrong:

- Option B: Q — Q is the Developer, not the Manager.
- Option C: S — S is the Analyst, not the Manager.
- Option D: T — T is the HR, not the Manager.

Final Answer: P is the Manager $\Rightarrow$ A



Answer: (A) [Go Back to Q 12](#)

Sol. 13.

Solution

Concept — Reading the Derived Assignment: Identify who holds the HR designation from the fully derived assignment.

Step 1 — Recall the derivation for HR: After fixing P=Manager, U=Tester, Q=Developer, R=Designer, the remaining designations (Analyst, HR) are assigned to S and T. Since condition (ii) says $S \neq \text{HR}$, we get S=Analyst and **T=HR**.

Step 2 — Confirm: T = HR ✓. This is consistent with all conditions.

Why other options are wrong:

- Option A: S — condition (ii) explicitly states S is NOT the HR.
- Option C: U — U is the Tester (condition iv).
- Option D: R — R is the Designer (derived from conditions iii and v).

Final Answer: T holds the HR designation $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 13](#)

Sol. 14.

Solution

Concept — Evaluating Statements Against the Derived Assignment: Check each statement: P=Manager, Q=Developer, R=Designer, S=Analyst, T=HR, U=Tester.

Step 1 — Evaluate each option:

- Option A: “Q is the Analyst” — Q is the **Developer**. **FALSE**.
- Option B: “S is the HR” — S is the **Analyst** (condition ii forbids S=HR). **FALSE**.
- Option C: “U is the Tester” — condition (iv) directly states U is the Tester. **TRUE**. ✓
- Option D: “R is the Developer” — R is the **Designer**; Q is the Developer. **FALSE**.

Step 2 — Identify the correct statement: Only Option C is consistent with the



derived assignment.

Final Answer: U is the Tester — the only correct statement $\Rightarrow$ C

Answer: (C) [Go Back to Q 14](#)

Sol. 15.

Solution

Concept — Counting by Initial Letter: Count how many of the six designations begin with the letter 'D'.

Step 1 — List all designations starting with 'D': From the full set {Manager, Developer, Designer, Analyst, Tester, HR}:

- Developer (held by Q)
- Designer (held by R)

Step 2 — Count the employees: Q (Developer) and R (Designer) — **2 employees** have a designation starting with 'D'.

Why other options are wrong:

- Option A: 0 — ignores both Developer and Designer.
- Option B: 1 — counts only one of the two 'D' designations.
- Option C: 3 — no third designation in this set begins with 'D'.

Final Answer: 2 employees (Q and R) have designations starting with 'D' $\Rightarrow$ D

Answer: (D) [Go Back to Q 15](#)

Sol. 16.

Solution

Concept — Direct Condition Application: Read condition (i) directly.

Step 1 — Apply condition (i): Condition (i) states: Annual Day is held in **January**. This is a fixed, unconditional assignment.

Step 2 — Confirm with condition (vii): Condition (vii): Annual Day is organized by C. Combined with (i): C organizes Annual Day in January.

Why other options are wrong:



- Option B: March — March is the month for E's event (condition iv). Annual Day is in January.
- Option C: May — May is when the Science Fair is held (condition viii).
- Option D: July — July is when the Sports Meet is held (condition iii).

Final Answer: Annual Day is held in January $\Rightarrow$ A

Answer: (A) [Go Back to Q 16](#)

Sol. 17.

Solution

Concept — Logical Deduction (Assignment Puzzle): Apply all conditions to determine who organizes Cultural Fest.

Step 1 — Apply fixed conditions: From (vii)+(i): C = Annual Day = January. From (ii)+(viii): B = Science Fair = May. From (vi): D = Tech Expo. From (iv): E's event is in March.

Step 2 — Determine remaining events for A and E: Events assigned: Annual Day (C), Science Fair (B), Tech Expo (D). Remaining events: Sports Meet and Cultural Fest — for A and E.

Step 3 — Apply condition (v): Cultural Fest is organized by neither A nor C. Since C is already taken and A is excluded by (v), Cultural Fest must be organized by E. Therefore: E = Cultural Fest = March; A = Sports Meet = July.

Why other options are wrong:

- Option A: A — condition (v) explicitly excludes A from Cultural Fest.
- Option C: C — C organizes Annual Day (condition vii).
- Option D: D — D organizes Tech Expo (condition vi).

Final Answer: E organizes the Cultural Fest $\Rightarrow$ B

Answer: (B) [Go Back to Q 17](#)



Sol. 18.

Solution

Concept — Direct Condition Application: Condition (vi) directly assigns D's event.

Step 1 — Apply condition (vi): Condition (vi) states: D organizes **Tech Expo**. This is an unconditional, direct assignment.

Step 2 — Determine D's month: Events with known months: Annual Day=January, Science Fair=May, Sports Meet=July, Cultural Fest=March. The only remaining month is **September**. Therefore D = Tech Expo = September.

Why other options are wrong:

- Option A: Annual Day — Annual Day is organized by C (condition vii).
- Option B: Sports Meet — Sports Meet is organized by A (derived in Sol. 17).
- Option D: Science Fair — Science Fair is organized by B (condition ii).

Final Answer: D organizes the Tech Expo $\Rightarrow$

Answer: (C) [Go Back to Q 18](#)

Sol. 19.

Solution

Concept — Direct Condition Application: Condition (iii) directly states the month for Sports Meet.

Step 1 — Apply condition (iii): Condition (iii) states: Sports Meet is held in **July**. This is an unconditional, direct assignment.

Step 2 — Confirm with the full derivation: From Sol. 17, A = Sports Meet = July ✓.

Why other options are wrong:

- Option A: January — January is the month for Annual Day (condition i).
- Option B: March — March is the month for E's event (Cultural Fest, condition iv).
- Option C: May — May is the month for the Science Fair (condition viii).

Final Answer: Sports Meet is held in July $\Rightarrow$

Answer: (D) [Go Back to Q 19](#)



Sol. 20.

Solution

Concept — Reading the Derived Full Assignment: Identify which organizer's event falls in September.

Step 1 — Compile the full assignment:

- C → Annual Day → January
- E → Cultural Fest → March
- B → Science Fair → May
- A → Sports Meet → July
- D → Tech Expo → September

Step 2 — Identify the organizer in September: D's event (Tech Expo) is in September. Therefore **D** is the organizer whose event is in September.

Why other options are wrong:

- Option B: B — B's event (Science Fair) is in May, not September.
- Option C: E — E's event (Cultural Fest) is in March, not September.
- Option D: A — A's event (Sports Meet) is in July, not September.

Final Answer: D's event is in September ⇒ A

Answer: (A) [Go Back to Q 20](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	C	3	D	4	A	5	B
6	C	7	D	8	A	9	B	10	C
11	D	12	A	13	B	14	C	15	D
16	A	17	B	18	C	19	D	20	A

Quick Reference: Correct Answers

Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	6	C	11	D	16	A
2	C	7	D	12	A	17	B
3	D	8	A	13	B	18	C
4	A	9	B	14	C	19	D
5	B	10	C	15	D	20	A

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